Fall 2006

Tennessee Engineer Fall 2006

College of Engineering

TENNESSEE engineer

Vol. IX • Issue I • Fall 2006

A Newsletter for Alumni and Friends of the University of Tennessee's College of Engineering

National Science Foundation Director Visits UT College of Engineering

Arden L. Bement Jr., Director of the National Science Foundation (NSF), visited the UT College of Engineering Sept. 13 and was a featured speaker in the Department of Nuclear Engineering Colloquium Program.

Bement's talk, "The Globalization of Science and Engineering: Competing and Collaborating," focused on current global challenges facing United States scientists and engineers.

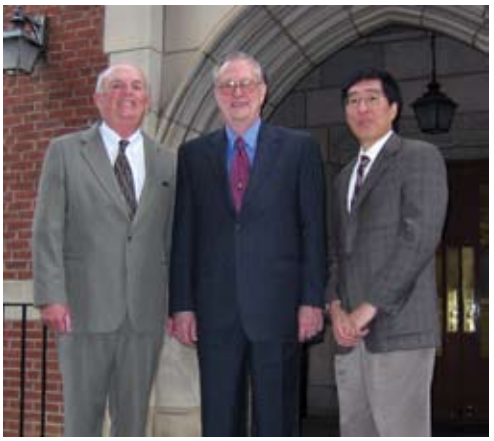
NSF is one of the major sources of American research funding. As NSF Director, Bement oversees an agency providing support to 200,000 scientists, engineers, educators and students each year with a budget of about $5.5 billion.

Bement discussed the challenges faced by the country in maintaining technology leadership in the face of major growth by countries like India and China, which are making major investments in both scientific talent and infrastructure.

"There are few people as close to this issue as Dr. Bement," said Lee Riedinger, UT's Interim Vice Chancellor for Research. "He brings a unique perspective to the table on global scientific competition."

In addition to increased competition for scientific talent, there is increased global pressure on the United States to further develop a national ability to convert knowledge into applications.

Bement pointed to the need for increased investment in science and engineering research and education and also addressed enhancing the nation's role as both a scientific leader and trusted international partner.



Nuclear Engineering Department Head Dr. Lee Dodds *(left)* called upon his colleague NSF Director Dr. Arden Bement *(center)* to visit UT and address the global nature of science and engineering. Dean Way Kuo *(right)* has been instrumental in the development of the college's international initiatives.

Prior to becoming NSF Director in 2004, Bement was director of the Department of Commerce's National Institute of Standards and Technology. He was previously a Distinguished Professor and Head of the School of Nuclear Engineering at Purdue University.

Dr. Lee Dodds, Professor and Head of the UT Nuclear Engineering Department, met Bement in the early 1990s when they both had students competing in the American Nuclear Society's Annual Student Design Competition in Washington, D.C. Dodds stayed in touch with Bement over the years, and recently invited him to speak in the UTNE Department Colloquium Program.

"Arden's breadth of knowledge goes way beyond his roots in nuclear engineering," Dodds said. "Our country needs more science and technology leaders like Arden Bement, and we are immensely pleased to have him participate in our Colloquium Program."

"We are honored that Arden chose to visit UT," said Way Kuo, COE Dean. "We are very grateful for the support NSF provides to our college, and his address offered a great deal of valuable information for our researchers."

UT Chancellor Loren Crabtree hosted a dinner to welcome Bement to Knoxville and the university on the evening prior to the colloquium.

An archive of Bement's web cast address is available at http://www.engr.utk.edu/nuclear/colloquia/Archive.

–Story by Kim Cowart

Two Female Faculty Members Claim NSF CAREER Awards

The National Science Foundation's (NSF) prestigious Early Career Development Awards (CAREER) support new tenure track faculty planning to develop highly integrative and effective careers in research and education. In 2005, two faculty members of the College of Engineering were added to the growing list of CAREER Award recipients in the college.

Dr. Hairong Qi, Associate Professor in the Department of Electrical and Computer Engineering, received her award for research titled "Collaborative Signal and Information Processing in Sensor Networks." Dr. Qi received her Ph.D. from North Carolina State University and through her research hopes to tackle challenges of collaborative processing such as contradictory requirements between energy efficiency and fault tolerance.

Dr. Hairong Qi

Dr. Jayne Wu, Assistant Professor in the Department of Electrical and Computer Engineering, received her CAREER Award for research titled "Developing Asymmetric-Polarization AC Electrosmosis for Lab-on-a-Chip." Dr. Wu received her Ph.D. from the University of Notre Dame and has been part of the ECE faculty since August 2004. Dr. Wu supports interdisciplinary research in the areas of microfluids, bioMEMS, sensors and actuators through her development of a Micro-Sensors and Actuator Laboratory at UT.

Dr. Jayne Wu

"Dr. Qi and Dr. Wu's achievements change the perception of engineering as a male-dominated field. Their accomplishments help to attract more females to this promising field and encourages them to succeed," said Dr. Samir El-Ghazaly, head of the electrical and computer engineering department. "These awards are a statement and testimony of the quality of junior faculty recruited by the ECE department and show promise for the future."

"The number of CAREER Awards in the College of Engineering has increased substantially in the last several years," said Dr. Wayne Davis, associate dean of research and technology. "This increase indicates that our faculty members are highly qualified and very competitive on the national scene."

–Story by Amanda Womac

COLLEGE *events*

From the Dean's Desk

We are highlighting our College of Engineering faculty in this issue of *Tennessee Engineer*.

COE faculty members are the foundation for our success. We must have motivated, enthusiastic and accomplished professors to provide innovative instruction for our students and to conduct pioneering research that will help boost the college's funding and gain national recognition for the university. We are continuing to exert strong efforts to recruit, hire and retain quality faculty for the COE.

We are introducing four new faculty members in this issue, as well as the new head of our Department of Chemical Engineering (ChE), Dr. Bamin Khomami. Dr. Khomami comes to us from Washington University in St. Louis, Mo., and will bring an exciting new dynamic to the ChE department.

Recently, faculty in each of the COE's seven departments have been conducting benchmarking activities to compare our efforts with that of our peer institutions. This focus on quality and accountability greatly assists us in identifying the areas that need improvement as well as the categories where we are doing well.

Our college is fortunate to have many professors who are international experts in their respective fields of study. Several faculty members who have been awarded chairs and professorships in the college are featured in this issue. In recent years, the college has added two new awards, including the Fred M. Roddy Professorship in Biomedical Engineering and the CTI Chair in Electrical and Computer Engineering.

The current 2007 rankings from *U.S. News and World Report* showed the COE's overall undergraduate engineering program ranked 42nd among national public universities offering doctorate degrees and in 71st place among all national universities. The college has recently placed a greater emphasis on strengthening our undergraduate programs, and being ranked as one of the top 45 public engineering institutions shows we are making progress. Motivated faculty, staff and students are key factors to the college's success, but we still have room for improvement.

As always, the fall semester is a time of exciting change and energy on the UT campus. I look forward to working with our faculty and staff this year to continue our efforts to make our College of Engineering one of the top engineering educational institutions in the nation.

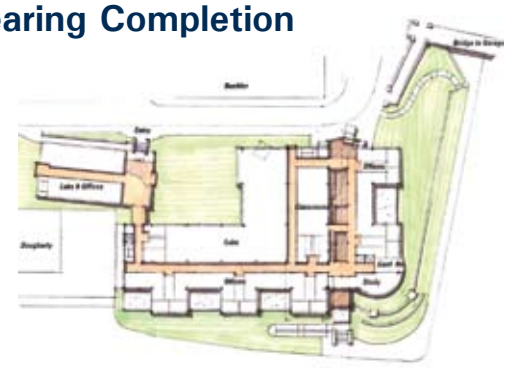
We hope you enjoy this issue. Please direct any comments to coe@utk.edu.

Way Kuo
Dean of Engineering and
University Distinguished Professor

Contents

New ECE Building Design Nearing Completion

Excitement is growing in the college about the construction of the new Department of Electrical and Computer Engineering building. Groundbreaking is currently slated to take place in March of 2007.



This artist's rendering of the Min Kao Electrical and Computer Engineering Building shows the proposed fifth floor layout from above.

The building was initially funded by a $12.5 million donation from alumnus Dr. Min Kao, CEO of Garmin Ltd, one of the world's largest manufacturers of Global Positioning Systems (GPS) products. Kao's total donation of $17.5 million included $5 million designated for a dollar-for-dollar fund-raising initiative designed to create a $10 million endowment for the ECE Department.

Tennessee Governor Phil Bredesen and the state Legislature provided an additional $25 million in matching funds for the facility, bringing the building project to a total of $37.5 million for the 150,000 square foot facility.

"We are coming along very well with our plans for the building," said Dr. Wayne Davis, COE associate dean for research and technology. "The architectural design will be completed in early 2007, after which the university will seek and award a contract with a construction firm. After the groundbreaking, we anticipate the actual construction of the building will take about two and a half years, with completion in August of 2009."

The building has been sited on the east side of campus known as "The Hill," on Estabrook Drive between the Dougherty Engineering Building and Cumberland Avenue, directly across the street from the 11th Street Parking Garage.

The two architectural firms working on the project, Bullock Smith and Partners and Lindsay and Maples Architect, working closely with the Department of Electrical and Computer Engineering, have created a preliminary plan for the six-floor building that includes a soaring atrium, a classroom annex, a 2,500 square foot auditorium and a spacious deck with a magnificent view of downtown Knoxville.

The building will also overlook a City of Knoxville-owned greenway, which is currently receiving an extensive landscaping upgrade.

Continued on page 4

Newsletter Production

Published by
Office of Communications
College of Engineering
The University of Tennessee
207 Perkins Hall
Knoxville, TN 37996-2012

Editor
Kim Cowart

Associate Editor and Graphic Design
Craig Cook

Contributing Writers
Megan McCarter
Amanda Womac

Contributing Photographer
Nick Myers, UT Creative Services

Publication Authorization Number: E01-1301-012-004-07 DOP: 9/22/06

New Administrators Bring Experience and Expertise in Helping Students Succeed

In keeping with its initiative to provide students with the academic and experiential opportunities necessary to become successful engineers, the College of Engineering has created two new administrative positions to help undergraduate students identify, plan and achieve their professional goals.

Margie Russell

The college welcomed **Margie Russell**, the new Engineering Advising Director, on May 22, 2006. In just three months, Russell, who is in her fifteenth year of experience in university student affairs, has already implemented several strategies to enhance the quality of and knowledge about advising services offered by the college, including construction of the new engineering advising services website, http://www.engr.utk.edu/advising.

"Advising is not just about picking out classes," said Russell. "It is a teaching role you have with the student—teaching them how to make good decisions about not only academics, but choosing a career path, about what they ultimately want to do and how they are making choices now that will impact them later."

Suzanne Sawicki

The new position of Coordinator II in the Office of Professional Practice also assists students in finding the best professional fit in their area of interest. On June 1, 2006, this position was filled by **Suzanne Sawicki**, who has over 10 years of experience in human resources and recruiting, specializing in areas of manufacturing and technology.

"Suzanne brings a new perspective to the Office of Professional Practice," said Walter Odom, OPP Director. "As we expand our program and the boundaries of our geographic employer area, her expertise in human resources and technology will be very valuable."

With advising and professional services already in place, undergraduate students need only to take the initiative to ask for help when help is needed.

"I think what is amazing about UT is there are so many resources here," said Russell. "Every student we admit, we want to be successful and we want to graduate, and there is so much support here to help do that. Asking for help is really the only step students have to take to get started."

Faculty Focus — Dr. John Tyner

"My wife likes to joke that I'm half Vulcan," said Dr. John Tyner, assistant professor in the Department of Biosystems Engineering and Soil Science. He admits that he does in fact live up to this reference to his naturally logical disposition; it was, after all, one of the main determinants in his decision to pursue an academic career in the field of engineering. "I like the quantitative side of it," he said.

Tyner was born and raised in Oklahoma where he worked summers on his grandparents' ranch. As an undergraduate, he enrolled in the Naval R.O.T.C. and earned a B.S. in geology. After graduation, he finished his tour of duty before completing a master's in hydrogeology. While pursuing his master's, Tyner joined his college's cycling team and developed a passion for the sport, becoming a Category Three racer for both road and track categories. "What I love most about the sport is the speed," said Tyner. "Moving at 30-plus miles-per-hour in a pack of cyclists with only a few inches between tires is a rush. Cycling also promotes a healthy lifestyle and is non-polluting."

After achieving his master's, Tyner began a career as an environmental consultant, working mainly under contracts to clean up large sites that had been used and contaminated for decades and were in need of severe remediation.

"That's when I really decided I wanted to go into engineering and academia," he said. "I enjoyed the consulting, but I wanted to do the higher level, research side of the work."

Tyner left his job as a consultant and entered into a Ph.D. program in biosystems engineering at Oklahoma State University, where he also taught as a research assistant. His dissertation focused on describing infiltration and unsaturated soil hydraulic properties.

After arriving at UT in 2001, Tyner began to investigate a phenomenon that had been a major determining factor in the success of his jobs as an environmental consultant: air permeability.

"Air permeability describes how well air can move through soil. When soils get contaminated with oils or volatile substances, if air can pass through the soil, these substances can be cleaned out."

Two years ago, Tyner and a group of colleagues completed the development of an instrument that measures air permeability, a device that helps to inform environmental consultants as to the most appropriate method that should be used to decontaminate a particular site.

Tyner's current research focuses on another pressing environmental concern: storm water runoff. When precipitation falls, it either infiltrates or runs off into the nearest creek.

"Continued development puts a lot of pressure on the surface water systems," Tyner said. "If you look at a neighborhood being built today, it's much denser than neighborhoods from 20 or 30 years ago. Many new developments are divided into quarter acre lots, so there's very little pervious area to absorb water. This really intensifies the storm water runoff issue. The storm water is being pushed hard, and there's a need for research that can alleviate some of that pressure—especially in an area like east Tennessee, where you have significant precipitation."

Tyner is now conducting a study on pervious concrete. "If we can design urban areas with pervious concrete—especially areas that don't have a lot of traffic, such as parking lots—the water can infiltrate in more of a natural way through the concrete and into the underlying soil, instead of running off and going into the rivers."

One of the major advantages of pervious concrete is that contaminants are collected by soil

Live long and permeate—Dr. John Tyner stands in one of the test beds being prepared for his unique pervious concrete research.

rather than the rivers. "From a pollution angle, infiltration is a better solution," Tyner said. "You have a much better chance of retaining and cleaning out contaminants through the natural biological processes in the soil than just putting storm water into the rivers."

Since he decided to pursue a career in academia, Tyner's choice has proved very rewarding. "It's a lot of work, but I enjoy teaching and being able to conduct research," he said. Tyner is also kept busy as the father of two and a half children. "Eleanor is three, Lena is one and Brutus (my dog and first child) is eight. They're all convinced I live to entertain them, but the entertaining is mutual."

With a new family and a burgeoning career, Tyner is devoting himself to the fulfillment of both his personal and professional goals. "As far as the future goes, I plan to continue my research and work on building my program and raising a family," Tyner added.

–Story by Megan McCarter

New Department Head and Faculty Members Add a Wealth of Research Talent


Dr. Bamin Khomami

Dr. Bamin Khomami has been appointed the new Chemical Engineering Department Head as of Sept. 1, 2006. Dr. Khomami comes to UT from Washington University in St. Louis, where he was the Francis F. Ahmann Professor of Chemical Engineering. His degrees, all in chemical engineering, are: B.S., Ohio State University, 1983; M.S., University of Illinois, 1985; and Ph.D., University of Illinois, 1987. He joined the faculty at Washington University in St. Louis in 1987 as an assistant professor of chemical engineering. While at Washington University, he was a Visiting Professor at the Danish Polymer Centre, Technical University of Denmark, Copenhagen, Denmark; a visiting professor at Fisicia Fundamental, Universidad Nacional De Educacion A Distancia (UNED), Madrid, Spain; and a visiting professor at Stanford University.

Dr. Khomami's research includes transport properties of complex fluids, polymer physics, bio-molecular physics, non-linear dynamics, processing science of micro- and nano-structured materials, engineering of soft materials, applied mathematics and numerical analysis, computational chemistry and multi-scale modeling and simulation.

ECE Building Design *(continued from page 2)*

The majority of ECE classrooms, laboratories, offices and a 7,000 sq. ft. clean room will be housed in the new building.

Two architectural firms have also been selected for the renovation of Estabrook Hall. The recipient of $16.6 million from the Tennessee State Legislature last year, the building has been on the state's list of proposed renovation projects for a number of years.

Grieve and Associate and Pro2Serve, a multi-disciplinary architectural and engineering group, have been selected to manage the project.

"We are looking at a number of options for Estabrook," Davis added. "When you are dealing with a building this old, sometimes you run into unforeseen problems. The architects and the principal occupant, the Department of Civil and Environmental Engineering, are meeting monthly to address the needed design features. The date for ground breaking has not yet been announced, as the current occupants must be relocated to temporary facilities prior to beginning the renovation. Right now, 2010 is our estimated completion date."

The university is also constructing a new Joint Institute for Advanced Materials (JIAM) building on campus, utilizing $30 million in federal and state funding. Site reviews and planning are currently taking place, and the university has appointed the architects Barber/McMurray and Bullock Smith and Partners for the project. The JIAM building will house laboratories and offices for faculty and researchers from UT and ORNL who are extensively involved in materials research.

The new and renovated buildings will allow the college to accommodate growing enrollments and will provide more advanced facilities to enhance learning and research opportunities for students and faculty.


This rendering shows the new ECE building's profile as it will appear when traveling toward the structure on Cumberland Ave. from Downtown Knoxville.

The college also welcomes four new faculty members this fall.


Dr. Xiaorui Wang

Dr. Xiaorui Wang joins the faculty of the Department of Electrical and Computer Engineering. He received his D.Sc. degree in computer science from Washington University in St. Louis in 2006, and received his B.S. in 1995 from Southeast University in China and his M.S. in 2002 from the University of Louisville, both in computer science. His research interests are real-time embedded systems, distributed systems, Quality of Service control, power-aware computing and wireless sensor networks. During the summer of 2005, Wang served as a research intern at IBM Austin Research Lab, working on power control for IBM high performance computing servers.

Three new professors will join the Department of Mechanical, Aerospace and Biomedical Engineering:


Dr. Dongjun Lee

Dr. Dongjun Lee received his Ph.D. in mechanical engineering from the University of Minnesota in 2004, and his M.S. degree in automation and design and B.S. degree in mechanical engineering in 1997 and 1995, respectively, from the Korea Advanced Institute of Science and Technology in Seoul, Korea. Lee's research areas include bilateral teleoperation via Internet; multirobot teleoperation; geometric control of mechanical systems; and human interactive and cooperative robots. Lee was recently a postdoctoral research fellow in the Coordinated Science Laboratory's Teleoperation Group at the University of Illinois, Urbana-Champaign.


Dr. Cheng-Xian Lin

Dr. Cheng-Xian (Charlie) Lin was awarded a Ph.D. in mechanical engineering in 1992 from Chongqing University, China; received his M.S. from Southwest Jiatong University, China; and his B.S. from Shandong University, China, both in mechanical engineering. Lin's current research interests include computational fluid dynamics, micro-scale thermal/fluid phenomena and multiphase flows and transfers. As a PI, Co-Pi or scientist, Lin has secured and managed over $8 million in federal and private research and development projects. He is a member of the American Society of Mechanical Engineers, the American Institute of Aeronautics and Astronautics and the American Nuclear Society.


Dr. Eduard Karpov

Dr. Eduard G. Karpov graduated with a Ph.D. in mechanical engineering from the University of Southampton, Southampton, United Kingdom, in 2002. He received his M.Sc. in theoretical and mathematical physics and his B.Sc. in physics from Voronezh State University in Voronezh, Russian Federation. Karpov's research interests include interdisciplinary work in multiscale computation engineering, nanomechanics and biomaterials. Karpov was previously a member of the research faculty at Northwestern University.

The UT-Knoxville campus currently has several major building and renovation projects in the works, including the College of Business Administration's Glocker Hall; a new aquatic facility; the renovation of Neyland Stadium; and the completion of the Hesler Biology Building.

"This is an exciting time for the college, to be in the midst of the design and construction of all of these new facilities," Davis said. "We've just got to stay organized and focused on planning ahead to make the best use of both our new and current space."

–Story by Kim Cowart

World-Renowned Faculty Recognized for Exceptional Achievements

The College of Engineering faculty includes numerous professors who are internationally respected in their fields of research. Several of these exceptional professors have been awarded chairs or professorships as a result of their outstanding accomplishments.

Through the years, alumni and friends of the COE have established professorship and chairs through private gifts to support specific research areas.

Currently, two COE faculty members occupy chairs and four have professorships. "We look to our college's faculty to continue the valuable work of educating our country's future engineers and to carry on pioneering research activities, methods and products keeping us on the forefront of technology," said Dr. Way Kuo, COE dean. "These faculty members exemplify our college's tradition of excellence."

For more information on establishing a chair or professorship in the UT College of Engineering, contact Patty Shea, Engineering Development Director, at (865) 974-2779/pwshea@utk.edu.

Ivan Racheff Chair of Excellence in Materials Science and Engineering

Dr. Peter Liaw

In 1987, the Ivan Racheff Chair of Excellence in Materials Science and Engineering was established in honor of the late Ivan Racheff, owner of the Knoxville Iron Works (now AmeriSteel) to recognize excellence in teaching and research in materials science and engineering. **Dr. Peter Liaw**, professor of materials science and engineering at the University of Tennessee, now occupies the Chair.

Dr. Liaw's vision for the Chair is simple – create a collaborative research effort in order to produce the best science possible for future generations.

"Hopefully with cutting edge research and other faculty members, we can create a group of people working together towards the common good of materials science and engineering to educate younger generations so they can contribute to society," Liaw said.

Teamwork seems to be the mantra of Dr. Liaw's research, which includes mechanical behaviors and processing of advanced materials, including bulk metallic glasses and nanostructural materials using neutrons and synchrotion X-rays. With National Science Foundation (NSF) grants, Dr. Liaw and his colleagues are working towards creating a community of researchers in materials science and engineering for the benefit of future generations.

As a professor, Dr. Liaw finds fulfillment in his students' achievements. "I like to see younger generations become very well educated, develop great personalities, get good jobs and contribute to society," Liaw said.

Overall, Dr. Liaw appreciates the team spirit surrounding the Chair. "The objective of the chair is good research and integrity," Liaw said. "With younger faculty working together towards a common goal, we as a team can develop strong programs at the University of Tennessee in cooperation with our friends at the Oak Ridge National Laboratory. This will help elevate the reputation of the department and university in order to gain recognition. As a team, we can work together to achieve the best science possible for future generations."

Dr. Thomas Urbanik

The Goodrich Chair of Excellence in Civil and Environmental Engineering was established in 1988 to recognize a professor with national prominence in the field of civil and environmental engineering and honors UT alum Henry Goodrich, a 1943 civil engineering graduate, for his outstanding contributions to business and industry. **Dr. Thomas Urbanik**, a UT civil and environmental engineering professor and national leader of transportation research, now occupies the Chair.

"The Goodrich Chair made it possible for me to move from a full time research position to a position focusing on both research and education," said Urbanik, who relocated from the Texas Transportation Institute to the University of Tennessee in 2001 after he was appointed to the Goodrich Chair.

Urbanik is a global expert in the field of transportation system operation and management, specializing in the advanced traffic control systems, system performance measurement and optimization, highway-railroad grade crossings, transit priority, geometric design and transportation management during natural and technological emergencies.

Because of Urbanik's prominence in the transportation field, his students have the opportunity to participate in nationally significant research. Currently, two national cooperative highway research projects, funded by the Transportation Research Board, allow his students to work on cutting edge research in the transportation field.

"These programs offer my students the opportunity to participate in a type of research that will benefit the next generation," said Urbanik, who believes the Goodrich Chair has made it possible for him to give back his many years of research experience to his students.

"My understanding of the chair is to improve the quality of the research program," Urbanik said. "I think it's important to realize a good education is fostered by a good research program."

Goodrich Chair of Excellence in Civil and Environmental Engineering

EXCEPTIONAL *achievements*

Fred M. Roddy Professor in Biomedical Engineering

Dr. Richard Komistek

Dr. Richard Komistek has been named the first Fred M. Roddy Professor of Biomedical Engineering in the Department of Mechanical, Aerospace and Biomedical Engineering.

The professorship, which recognizes excellence in biomedical teaching and research, was recently established in honor of UT alumnus Fred M. Roddy, a 1927 mechanical engineering graduate and founder of the Cumberland Engineering Company.

"I believe that three main goals for this professorship must be attained," Komistek said. "First, I want to secure research funding in the fields of biomechanics and orthopedic devices that will allow us the opportunity to train graduate students and benefit those patients afflicted with arthritis. Secondly, I want to work with and train high-level graduate students to succeed in their future profession. It is not enough to help them get a degree. I want each of them to leave UT with a career. Therefore, each student must graduate with a thorough understanding of their field and be able to secure research funding, write journal articles and be able to communicate with both the technical and medical community. Thirdly, I want to ensure that our research directly benefits people afflicted with arthritis and leads to the development of longer lasting orthopedic devices."

Komistek serves as co-director of the Center for Musculoskeletal Research. His research interests include biomechanics of the human body using Kane's mechanics, developing mathematical models of the human body musculoskeletal system, in vivo kinematic and kinetic analysis of the human body, bio-controls, bio-vibrations and bio-design.

A member of the Knee Society, Komistek and his co-authors won that organization's Coventry Award in 2003, and Komistek was named as a College of Engineering Research Fellow in 2004 and 2006. He is also the Executive Director of the International Society of Technology in Arthroplasty.

He received his B.S.M.E., M.S.E.M. and Ph.D. degrees from the University of Memphis in Memphis, Tenn.

"I am grateful to the Roddy family for giving me this honor and I hope to fulfill their goals for this professorship," Komistek added. "The Roddys have demonstrated their desire to help people with arthritis by endowing this professorship, and I feel it is my obligation to follow through with their wishes that the research conducted directly benefits people. I am confident this professorship will significantly enhance my ability to conduct biomechanics research."

Dr. Kenneth Kihm

The Magnavox Professorship was established in 1981 by the Magnavox Company to recognize faculty for superior teaching and research accomplishments. In 2004, **Dr. Kenneth Kihm**, Department of Mechanical, Aerospace and Biomedical Engineering, was awarded the professorship.

"Above all, the Magnavox Professorship grants the honor and mettle for my interdisciplinary research activities of integrated and dynamic imaging of micro/nano-scale biosystems," Kihm said. "The main impact of the professorship is to contribute to enhancing the visibility of the University of Tennessee."

Dr. Kihm sees the primary research activities at the Micro/Nano-Scale Fluidics and Energy Transport (MINSFET) Laboratory of the UT-MABE fulfilling the goals and objectives of his Magnavox Professorship.

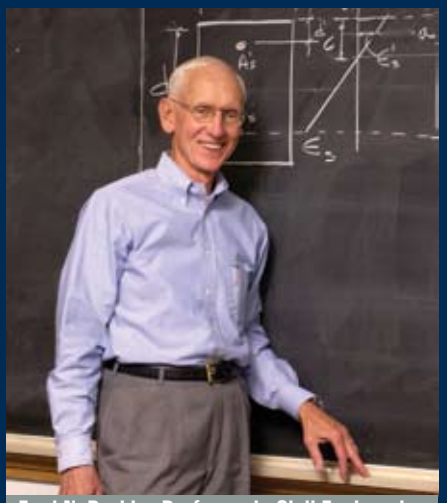
"Six top-class doctoral students are working on various research projects funded by the National Science Foundation, Department of Energy, NASA, the Air Force Office of Scientific Research, the State of Tennessee and an international agency," Kihm said. "My team has been publishing more than 10 articles per year in leading journals in the field."

Kihm is a pioneer in the field of micro-nano fluidics and transport, focusing on engineering properties for high throughput cytometry of target cells, such as cancer and stem cells, and examining nanoscale topology for cellular boundaries/surfaces and bionanoparticle tracking inside cells.

Dr. Edwin Burdette

Dr. Edwin Burdette is the Fred N. Peebles Professor in Civil Engineering in the Department of Civil and Environmental Engineering.

Dr. Peebles was a graduate of the UT College of Engineering and served as dean from 1968 until 1980. The professorship, established by friends, family and former students of Peebles, who died in 1981, recognizes outstanding teaching and research by COE faculty.



Fred N. Peebles Professor in Civil Engineering

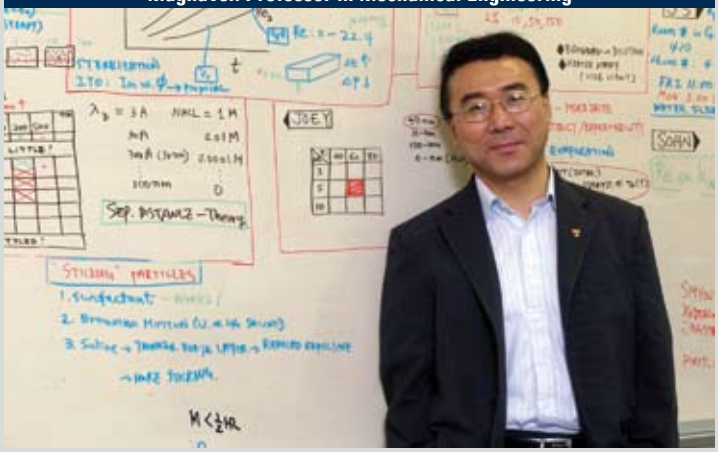
Peebles, a native of Paris, Tenn., began his career at UT in 1947 as a faculty member in the Department of Engineering Mechanics. In 1957, he became a full-time development engineer in the Reactor Experimental Engineering Division at the Oak Ridge National Laboratory, operated at that time by the Union Carbide Corporation for the U.S. Atomic Energy Commission. Peebles returned to UT in the fall of 1960 as professor in the Department of Chemical Engineering. In 1963, he was named the first head of the college's newly created Department of Engineering Science and Mechanics and served in that post until being named dean in 1968.

Under Peebles' assertive leadership, the College of Engineering experienced phenomenal growth in both the size and quality of its academic and research programs. Peebles was also the first dean to initiate a process for faculty performance reviews.

Burdette, a member of the COE faculty since 1969, has been active in research and teaching, and he has consulted extensively in the area of

"My vision for the professorship is to continue the current research activity level and concentrate on making one or two strategic areas grow, such as the study of inter- and intracellular transport of nanoscale transport carriers for both stem and cancer cells," Kihm said. "Another equally weighed vision is to implement the educational scope, particularly for undergraduates, toward the leading edge in research areas of nanoscale and biosystem science."

Magnavox Professor in Mechanical Engineering



structural engineering.

"Dean Peebles was a big influence on me, and he was very supportive; the main thing he stressed was that an effective faculty member should excel in both research and teaching–he really started our college on the road to effective research," Burdette said.

The majority of Burdette's research has involved testing either in the laboratory or in the field. He has been active in field-testing of bridges since 1969, and currently is co-investigator on a project involving field-testing of a highway bridge in Nashville, Tenn., and is principal investigator on research to develop an optimum mix for high performance concrete. Also, he carried out an extensive research effort devoted to the testing of anchors in concrete; research under his direction at UT provided data instrumental in the development of methodology used for prediction of anchor capacity.

"Research has made me a better teacher," Burdette added. "You don't get stale–you stay current with developments in your field. Although I think you can over-emphasize either research or teaching, to the detriment of one or the other, hopefully in my case they have complemented each other."

Burdette earned B.S. and M.S. degrees from the University of Tennessee-Knoxville in 1957 and 1961, and he received a Ph.D. from the University of Illinois in 1969.

Burdette was awarded the COE's Teaching Fellow Award in 2006. He is also the recipient of the UT Alexander Prize in 2001 and the University Macebearer Award in 1990. He received the Peebles professorship in 1981.

"I consider it one of the highest awards I ever received," Burdette commented. "I received it at the college's Honors Banquet, and my wife and I almost did not go that night! At the end of the evening, when the Peebles Professorship was announced and they were describing the recipient, I thought, 'Wow, that sounds like me!' And it was–I was so pleased and honored to receive this award that carries on Dr. Peebles' name and legacy."

Dr. Mongi A. Abidi

Dr. Mongi Abidi is the Weston Fulton Professor in the Department of Electrical and Computer Engineering.

The award, established by the Robertshaw Controls Company, honors UT graduate Weston Miller Fulton, who invented the Sylphon bellows mechanism, and recognizes superior classroom and research skills.

In 1898, Fulton, a meteorologist, accepted an appointment to the Knoxville Weather Bureau. While attending to his duties as weather forecaster, Fulton also began taking an interest in science courses offered at UT and soon became a dedicated student and teacher. During his tenure at UT (1898–1903), he served on the science faculty and continued his studies. In 1902, Fulton was awarded a Master of Science degree from the University of Tennessee.

One of Fulton's most notable inventions was the "Sylphon," a bellows-like device for thermostatic control of temperature, which led to the founding of the Fulton Company in 1904, where many of his inventions were manufactured.

Fulton held patents on more than 200 inventions; at one time the U.S. Patent Office in Washington had an entire room devoted to his devices.

"Weston Fulton had a leadership role in the area of controls, and the work I do fits in nicely with that philosophy, since the robots and sensors we develop, test and prototype have as their essence a controls system," Abidi said.

Abidi directs activities in the Imaging, Robotics, and Intelligent Systems Laboratory (IRIS: web site http://imaging.utk.edu), conducting research in the field of three-dimensional imaging. Since 1986, Abidi has acted as either principal investigator or co-principal investigator for research contracts totaling over $25 million.

Abidi is the recipient of the 2001 Science Alliance Faculty Award, the 2001 Brooks Distinguished Professor Award, the 1997-2000 Magnavox Professorship and the 1995 Chancellor's Award for Research and Creative Achievement.

He received his Principal Engineering degree in electrical engineering from the National Engineering School of Tunis, Tunisia, in 1981, and his M.S. and Ph.D. degrees in electrical engineering in 1985 and 1987, respectively, from the University of Tennessee.

"The Fulton professorship has provided me with an opportunity to give my students a realistic look at research and a chance to help them understand the goals of electrical and computer engineering," Abidi said. "I am grateful to have had the honor of carrying on Weston Fulton's legacy."

–Stories compiled by Kim Cowart and Amanda Womac

Weston Fulton Professor in Electrical and Computer Engineering

DEVELOPMENT *notes*

Governor's School Focuses on Biomedical Engineering

This summer marked the tenth anniversary of the College of Engineering's Governor's School program. At the time of its inception, UT-Knoxville's program, then known as the Governor's School for Manufacturing, was seventh in a line of summer programs established through the Tennessee Department of Education to provide gifted rising high school juniors and seniors with the opportunity to exercise their talents with peers and academic leaders who shared a similar interest. Selected students lived on the host campus for four weeks, taking non-credit classes and participating in various recreational activities.

After observing that similar programs offered by other states were giving college credit for classes and focusing on skills necessary to succeed as college freshmen, in 2004 Governor Bredesen charged the Department of Education to draw up a plan for a program that equipped these gifted students with experience that would ultimately contribute to their college success. The result was a program that lasted one week longer and gave six hours of academic credit for college-level courses in specific areas of study.

However, by the time the new plan was accepted in late 2004, the coordinators for the 2005 session had very little time to implement the necessary changes; consequently, the COE chose to offer two courses in engineering fundamentals.

"Since we were working late in the year to recruit students, and in view of the fact that engineering fundamentals was a standard subject, we had a very light applicant pool," said Dr. Richard Jendrucko, the 2006 program director. "In 2005, we received 15 applications and wound up with 10 students."

In planning the 2006 program, COE coordinators decided to offer a more high-profile subject: biomedical engineering. The result was phenomenal.

"We got overwhelming interest," Jendrucko said. "We received 199 applications, and we were only funded by the state to accept 30. The selection process was difficult, and the selected students were all straight-A students with high levels of recommendation."

After a few last minute cancellations, the final group consisted of 27 of the brightest high school students in the state, two thirds of which were female. "It was a very intense program," said Jendrucko, "But it was an overall success."

Gretchen Hinton, a master's student in biomedical engineering, served as a graduate teaching assistant during this summer's program. According to Hinton, this summer's program above all succeeded in preparing the students for their freshman year of college. "After five weeks as 'college students,' the group had already dealt with the major issues all college freshman face," said Hinton. "I heard a lot from the students about how they had to juggle the freedom away from parents with the responsibility of studying, living with a complete stranger, learning to study or change their study habits and budgeting not only money, but time as well."

Plans for the 2007 program are still tentative; however, the application is already available on the state's Department of Education website and describes the Governor's School for Engineering as: "focusing on engineering applications of human physiology emphasizing biomedical concepts and effective communications." Judging by the popularity and successful execution of this year's program, the college can look forward another rewarding summer as host of the Governor's School for Engineering.

–Story by Megan McCarter

End-of-Year Giving Deadlines

This year, December 31, 2006 falls on a Sunday. For anyone making calendar year-end gifts, in order to qualify for the 2006 charitable gift deduction, please note the following:

Electronic Transfers: The gift is legally made on the date when the stock or other securities are received in the UT or UT Foundation brokerage account (not the date they leave your account). Brokerage firms and banks will not be open to process or receive transfers on December 30 or 31. Accordingly, in order to qualify as 2006 gifts, the stock or securities must be received in the UT or UTF account before the close of business on Friday, December 29. Please note: electronic transfers generally take at least 24 hours and often as much as 48-72 hours to process; please plan ahead with your broker.

Credit Cards: The gift is legally made on the date when the bank processes the credit card transaction. In order for UT to initiate and complete the transaction with the bank during 2006 business hours, we need your credit card information and authorization no later than 3:00 p.m. EST on Friday, December 29.

U.S. Mail (stock, checks or other gifts sent via U.S. Mail): The gift is legally made on the date of the postmark on the envelope. The Post Office will be open to accept outgoing mail on Saturday, December 30. The Post Office, however, will be closed on Sunday December 31 and any envelope deposited into the mail that day will be postmarked in 2007.

Hand Delivery: Stock, checks or other gifts hand delivered to any UT staff must be delivered no later than 3:00 p.m. EST on Friday, December 29, in order for UT to process the gift before the close of business in 2006.

Please refer questions to the UT System Gift Records Office at 865-974-5477 or the COE Engineering Development Office at 865-974-2779. Thank you!

William S. Johnston Sr. — Making a Difference

In 1962, William S. Johnston Sr. was a young College of Engineering graduate who had just received his B.S. in Mechanical Engineering—"He was the typical engineer; everything was just a problem that needed solving," stated his son, Bill Johnston Jr. And solve he did. Mr. Johnston spent his entire career as a design engineer for the Ford Motor Company; working originally on military vehicles and then moving to light-duty trucks. And that is not all he did. Widowed, he raised and instilled in his four children the importance of a higher education. His hard work provided that opportunity.

There was another problem that needed solving. Having always regarded UT as being an outstanding engineering school affording him the tools necessary to reach his goals, how could he help other students achieve theirs? Through his estate, Mr. Johnston provided funds to establish the **William S. Johnston 1962 Scholarship Endowment**. "I think he was happy knowing the average middle class graduate could find a means via his estate to contribute to advancing education one step further," Johnston Jr. said. "You don't have to be a multi-millionaire to make a difference." Problem solved.

If you would also like to make a difference by providing for the College of Engineering in your estate plans, contact the Engineering Development Office at (865) 974-2779 or email engrdev@utk.edu.

Engineering Development Team Dedicated to Boosting Fund-Raising Efforts

The mission of the Development Office is to cultivate and strengthen ongoing support of the College of Engineering through corporate and private contributions, and through volunteer efforts such as those of an active Board of Advisors. Responsibilities of the Development Office include coordination of fund-raising and alumni activities. It is through the generous contributions of alumni and friends that we are able to enhance the high standards of academic achievement, research and community outreach.

The ongoing fund raising initiatives of the Engineering Development Office include building existing and establishing additional funds to support scholarships, fellowships, professorships, faculty support and program enrichment and technology.

The Engineering Development team consists of *(left to right)* Chad Wiles, Emily Marshall, Peg Schneider, Mandy Velasquez and Patty Shea.

With the start of the new academic year, the Engineering Development Office is delighted to welcome Chad Wiles, who assumed the position of Assistant Director of Development for the college in September.

Wiles, who has a B.S. degree in business administration from DeVry University, has an extensive background in finance, sales and marketing and management. He brings with him a skill set that will serve the college well in the impending system-wide capital campaign, in addition to other COE fund-raising initiatives.

"Chad's background in developing and maintaining fiscal relationships will be very beneficial to the college," Patty Shea, Director of Engineering Development, said. "It is important we have an individual who can assist us with increasing the private support we need to maintain and enhance the strengths of the university and the college."

"Teamwork is critical to the success of our office supporting the mission and vision of the college of engineering," Shea added. In addition to Shea and Wiles, other development office staff members include advancement specialist Peg Schneider and graduate student assistants Emily Marshall and Mandy Velasquez.

Schneider has a B.A. in art history and museology from the University of New Mexico and a diverse background that includes extensive work as a curator and consultant for museums and galleries, where she has managed large national and international exhibitions. Schneider worked with the Measurement and Control Engineering Center prior to joining the development office staff in 2004.

Marshall, a native of Fort Wayne, Ind., received a B.S. in journalism and advertising from Ball State University and recently completed a M.S. Summa Cum Laude in communications with a concentration in public relations from UT. Marshall, who has been with the development office since 2004, plans to continue her work in event planning and management, public relations and non-profit organization programming.

Velasquez is from Dallas, Texas. She graduated Magna Cum Laude in May 2006 from Texas Christian University with a B.S. in speech-language pathology. Currently a first-year student in UT's doctorate of audiology program, Velasquez hopes to work as a pediatric audiologist and plans to begin the process of obtaining certification in auditory-verbal therapy in the near future.

"We have a dedicated staff of very talented individuals who bring a variety of skills to their position," Shea added. "All of us are excited about working with the faculty, staff and students in the College of Engineering as well as UT administrators to generate support for our programs and activities."

Contact the Office of Engineering Development at (865) 974-2779 or engrdev@utk.edu.

College of Engineering • Board of Advisors

Dr. Bert Ackermann Jr.
(BS/NE '65, MS/NE '67, PhD/NE '71)
CEO, SPINLAB
Knoxville, Tenn.

Ms. Karyl Bartlett
(BS/ME '84, MBA '00)
Director, Composite Manufacturing Center, Boeing Fabrication
The Boeing Company
Seattle, Wash.

Mr. Howard E. Chambers
(BS/ME '64)
Vice-President and General Manager
Boeing Company Foundation
Seal Beach, Calif.

Dr. Tom F. Cheek Jr.
(BS/EE '61, PhD/EE '69)
Vice President of R & D
Epic Systems, Inc.
Dallas, Texas

Mr. Joe C. Cook Jr.
(BS/IE '65)
Founder and Principal
Mountain Group Capital, LLC
Nashville, Tenn.

Dr. Mark E. Dean
(BS/EE '79)
IBM Fellow and Vice President
Almaden Research Center
San Jose, Calif.

Mr. Ron Green
(BS/EPh '70, MS/EPh '78)
Chairman
ADVATECH, LLC
Charlotte, N.C.

Dr. Michael W. Howard
(BS/EE '80, PhD/Engr '96)
President for Beta-Development
Tennessee Center for Research and Development
Knoxville, Tenn.

Mr. Dwight N. Hutchins
(BS/ChE '86)
Partner
Accenture
Washington, D.C.

Mr. Raja J. Jubran
(BS/CEE '81)
Chairman and CEO
Denark Construction, Inc.
Knoxville, Tenn.

Dr. H. Lee Martin
(BS/ME '78 PhD/ME '86)
Managing Member
Clarity Resources, LLC
Knoxville, Tenn.

Mr. Edwin A. McDougle
(BS/CEE '69, MS/CEE '75)
Principal
Ross Bryan Associates, Inc. Engineers
Nashville, Tenn.

Mr. Mark A. Medley
(BS/ME '69, MBA/Ind. Mgmt., '70)
President and CEO
Control Technology, Inc.
Knoxville, Tenn.

Mr. Andrew K. Phelps
Principal Vice President
Bechtel National, Inc.
Los Alamos, N.M.

Mr. James B. Porter Jr.
(BS/ChE '65)
Vice President of Engineering and Operations
E.I. DuPont de Nemours Corp.
Wilmington, Del.

Mr. Richard T. Snead
(BS/IE '73)
President and CEO
Carlson Restaurants Worldwide
Carrollton, Texas

Mr. Mike Young
(BS/CE '71, MS/EnvE '72)
Senior Vice President/CEO
Allen and Hoshall, Inc.
Memphis, Tenn.

ALUMNI *news*

1950s

Margaret Drake *(BS/ME '57; MS/ME '59)* received a distinguished 50-year service award from the American Society of Heating, Refrigerating and Air Conditioning Engineering. She lives in Circleville, Ohio.

W. Lester Ledford *(BS/EE '59)* recently retired. He lives in Florence, Ala.

1960s

Houshang Daryabeigi *(BS/ChE '63)* is a project manager for Chausse Construction Company. He lives in Tehran, Iran.

Gerald Hadder *(BS/ChE '68)* received the SAE International's Barry D. McNutt Award for Excellence in Automotive Policy Analysis in May 2006. He lives in Oak Ridge, Tenn.

1970s

Michael T. Calfee *(BS/ChE '71)* recently retired from the Technology Development Division at the Y-12 plant in Oak Ridge, Tenn. He lives in Oak Ridge, Tenn.

J. Kent Lominac *(BS/CE '71)* is responsible for the operation and maintenance of the Aerospace Test Facilities at Arnold Air Force Base in Tullahoma, Tenn. He lives in Tullahoma, Tenn.

Fred Maynard Davis *(BS/EE '72)* works for Bechtel National as a deputy-engineering manager. He lives in Huntsville, Ala.

Don M. Brown P.E., CPESC *(BS/CE '75)* is the regional manager for Pennoni Associates of Philadelphia. He lives in Philadelphia, Penn.

1980s

William C. Bradford P.E. *(BS/ME '80)* has been promoted to senior vice president at Hanson Professional Services, Inc. He lives in Lake Mary, Fla.

LaWanda Long *(BS/IE '83)* is currently a graduate student in the School of Theology at Emory University. She lives in Tyrone, Ga.

Robert V. "Bob" Walker *(BS/ES '84; MS/IE '91)* is part of the operation and maintenance at Arnold Engineering Development Center at Arnold Air Force Base in Tullahoma, Tenn. He lives in Estill Springs, Tenn.

Michael Roberts *(BS/NE '85)* was a recipient of the Defense Programs Award of Excellence as part of a team working at the Y-12 National Security Complex in Oak Ridge, Tenn., involving the design of a Criticality Accident Alarm System. He lives in Knoxville, Tenn.

1990s

Jonathan G. Overly *(BS/ES '94; MS/ES '97)* founded the East Tennessee Clean Fuels Coalition, which promotes the use of alternative fuels. He lives in Maryville, Tenn.

Kevin Lloyd Snyder *(BS/EE '94)* works for DaimlerChrysler as a team leader in machine monitoring in Auburn Hill, Mich. He lives in Livonia, Mich.

William L. "Will" Mason II *(MS/NE '96)* will live in Lyon, France, for three years with his family as part of his new duties as an engineer with AREVA.

Kimberly Bartol *(BS/ES '97)* is a project manager with EDS in Nashville, Tenn. She lives in Spring Hill, Tenn.

2000s

Zachariah Chambers *(PhD/ESM '00)* was promoted to Associate Professor of Mechanical Engineering and received tenure at the Rose-Hulman Institute of Technology. He lives in Terre Haute, Ind.

Juliet L. Outten *(BS/ME '00)* works for Bombardier Transportation in Berlin, Germany, where she lives.

Susannah Caroline Culbertson *(BS/CE '01; MS/CE '03)* is a project manager for PSI in Nashville, Tenn., where she lives.

Baskar Vairamohan *(MS/EE '02)* is a power quality engineer at EPRI Solutions, Inc., a subsidiary of the Electric Power Research Institute and lives in Knoxville, Tenn.

Katherine Suzanne Alford *(BS/BME '03; MS/ES '05)* works for Smith and Nephew as a product development engineer. She lives in Memphis, Tenn.

Natoshia Nicole Martin *(BS/ChE '04)* is an environmental engineer with the Alabama Department of Environmental Management. She lives in Montgomery, Ala.

Stephen Dzialo *(BS/AE '05)* is an officer in the U.S Air Force. He lives in Pensacola, Fla.

Vasudevan Hariharn *(MS/MSE '05)* is a manufacturing process engineer with GE Healthcare and lives in Wauwatosa, Wisc.

Michael Hedge *(BS/ME '05)* was recently promoted to Project Leader at the Southwest Research Institute where he works as an automotive engineer. He lives in San Antonio, Texas.

Memorials

Julian E. Hix *(BS/ME '47)* died February 1, 2006. She lived in Ringgold, Ga.

Eugene Hopper Newcomb *(BS/Engr. '48)* died July 16, 2006. He lived in Knoxville, Tenn.

Sanford Jack Jr. *(BS/CE '50)* died May 18, 2006. He lived in Knoxville, Tenn.

Colonel Lloyd Moore Carter Jr. *(BS/ChE '51)* died July 18, 2006. He lived in Knoxville, Tenn.

Robert Neil O'Brien *(BS/CE '55; MS/CE '59)* died June 26, 2006. He lived in Nashville, Tenn.

James Herbert Holladay *(BS/Engr. '60)* died June 16, 2006. He lived in Oak Ridge, Tenn.

H. Carlton Seaver *(BS/EE '61; MS/EE '65)* died December 18, 2005. He lived in Raleigh, NC.

Ralph H. Stallcup *(BS/ME '62)* died March 8, 2006. He lived in Hattiesburg, Miss.

Sam McCarty Murphy Jr. *(BS/Engr. '63)* died May 20, 2006. He lived in Knoxville, Tenn.

George Adcock *(BS/IE '64)* died December 19, 2005. He lived in Winston-Salem, N.C.

James Kyle Goldston *(BS/EE '86)* died August 26, 2006. He lived in Knoxville, Tenn.

Professor Emeritus Robert L. Maxwell died May 20, 2006. He lived in Knoxville, Tenn.

Retired MABE Professor Succumbs to Cancer

Dr. Frank Speckhart, a retired professor in the Department of Mechanical, Aerospace and Biomedical Engineering, died Sept. 6 of pancreatic cancer. He was 65.

Speckhart, who held an IBM Engineering Professorship at UT, taught and conducted research at the university from 1967 until retiring in the spring of this year.

Dr. Frank Speckhart

Speckhart held several patents on tools, devices for automobile engines, suspensions and safety systems, as well as an infant health monitoring system.

He was instrumental in the development of the college's joint Master of Science/Master of Business Administration degree program.

"Frank was an outstanding member of my faculty, an excellent instructor and accomplished researcher whose impact on his field will continue to be felt for years," said Dean Way Kuo. "It's not easy losing him."

COE Alums Mark Outstanding Achievements

Robert W. Emery

Robert W. Emery *(BS/ChE '86)* has been named as a 2006 Fellow Member of the National Society of Professional Engineers (NSPE). The Fellow membership honors those active NSPE members who have demonstrated exemplary service to the profession, NSPE and the community.

Emery is a Principle Engineer at Eastman Chemical Company in Kingsport, Tenn. He has been an NPSE member since 1990.

Dr. Daniel F. Jennings

Dr. Daniel F. Jennings *(BS/IE '61)*, a professor in the Industrial Distribution Program at Texas A&M University, was recently appointed to the I. Andrew Rader Professorship in Industrial Distribution. Jennings' research interests include areas of managing profitability, strategic alliances, environmental scanning, knowledge management and matching strategy and structure. Jennings also recently joined an elite group when he was inducted into the National Academy of Arbitrators. After graduating with honors from UT, Jennings obtained an MBA from Northeast Louisiana University and a Ph.D. from Texas A&M.

Four COE Faculty Receive Chancellor's Awards

The University of Tennessee's highest faculty and student honors are presented annually at the Chancellor's Honors Banquet. The 2006 banquet took place April 12, 2006, and several College of Engineering faculty were recognized, including:


Dr. Narendra Dahotre

Dr. Narendra Dahotre, a professor in the Department of Materials Science and Engineering and joint UT-ORNL faculty member, who received the Chancellor's Award for Research and Creative Achievement. Dahotre has devoted his entire educational and professional career to developing laser-based surface engineering. He holds 15 U.S. patents, all issued in the past nine years, and edited the only book of its kind on lasers in surface engineering. Dahotre was named as an Engineering Research Fellow in 2006 and was inducted as a Fellow in the American Society for Materials (ASM) International in 2004.


Dr. Benjamin Blalock

Dr. Benjamin Blalock, an assistant professor in the Department of Electrical and Computer Engineering and **Dr. Hahn Choo**, an assistant professor in the Department of Materials Science and Engineering, received the Chancellor's Award for Research and Creative Achievement Professional Promise.

Blalock directs activities in the Integrated Circuits and Systems Laboratory. A Quad Op Amp microchip developed by his team will be part of the 2009 NASA/JPL Mars Science Laboratory Rover. Blalock was named an Engineering Research Fellow in both 2005 and 2006.


Dr. Hahn Choo

Choo is internationally known for his work in advanced structural materials using neutron-scattering techniques. In 2002, Choo was a member of the team awarded a $4.74 million grant from the National Science Foundation (NSF) to establish the International Materials Institute (IMI) at UT. The group also won a second $2 million NSF grant to develop a neutron scattering research facility at ORNL's Spallation Neutron Source. Choo was designated as an Engineering Research Fellow in both 2005 and 2006.


Dr. Denise Ford Jackson

Dr. Denise Ford Jackson, an associate professor in the Department of Industrial and Information Engineering, was honored with the Chancellor's Extraordinary Community Service Award. Jackson works with the Tanasi Girl Scout Council, the Moses Teen Center of the Boys and Girls Club and the International Science Fair. Jackson has served as a mentor to numerous underrepresented students and has facilitated participation in the Office of Engineering Diversity and Tennessee Louis Stokes Alliance for Minority Participation summer programs to encourage interest in engineering careers.

Check out the College of Engineering's online newsletter

TENNESSEE engineer online

http://www.engr.utk.edu/TNengr

UT Helps Team of Local High School Students to Win National ASM Materials Camp Prize

Students at the 2006 ASM (the Materials Information Society) Third Annual Materials Camp, held during the week of June 5th in Oak Ridge, Tenn., used high-tech methods to examine pieces of debris from the space shuttle Columbia, which disintegrated during re-entry to the Earth's atmosphere February 1, 2003. The National Aeronautics and Space Administration (NASA) had never examined these particular pieces of debris. A debris request justification, a camp syllabus and a cut plan (planned cuts to create cross-sections for analysis) were submitted to NASA for approval, and NASA engineers Steve McDaniels and Rick Russell were instrumental in getting the paperwork approved and the debris specimens shipped.


Vanessa Garber *(left)* and Katie Strader *(right)* examine pieces of debris recovered from NASA's Space Shuttle Columbia at Materials Camp.

Prior to the camp, permission was granted by the International Metallographic Society (IMS) Board of Directors for the students to enter their work into the IMS Poster competition in the Undergraduate Student Category during the 2006 Microscopy and Microanalysis Conference. Working closely with Jaret Frafjord, a Y-12 materials scientist (and UT MSE graduate), and Y-12's summer interns Elena Garlea (a graduate student in the MSE Department) and Rob Panaro, the team of five students competed with six other countries and won first in its poster category and third in the overall competition. Team members included Katie Strader, West High School, Knoxville, Tenn.; Hubert Gibson, Oliver Springs High School, Oliver Springs, Tenn.; Emily Simonds, Webb School of Knoxville, Knoxville, Tenn.; Benjamin Petersen, Bearden High School, Knoxville, Tenn.; and Mike Manrod, Knox Catholic High School, Knoxville, Tenn.

The camp was co-chaired by Steve Dekanich, Y-12 National Security Complex, and Claudia Rawn, a Joint Faculty Member from Oak Ridge National Laboratory with the COE's Department of Materials Science and Engineering. NASA, Y-12, Oak Ridge National Laboratory, the University of Tennessee, MS Technology, Inc. and Visitec cosponsored the camp.

Commencement Ceremony 2006


The commencement event took place May 12, 2006, at the Knoxville Convention Center. Dr. Jeffrey Wadsworth, Director of the Oak Ridge National Laboratory, CEO and President of UT-Battelle, LLC and a Distinguished Research Professor in the COE's Department of Materials Science and Engineering gave the commencement address. COE Dean Way Kuo *(left)* presented Dr. Wadsworth *(right)* with a plaque to commemorate the occasion.


Jim Pippin *(center)*, Director of Engineering Diversity Programs, congratulates Iheanyi I. Usoh *(left)*, a computer engineering major, and Chidinma I. Iwueke *(right)*, a nuclear engineering major, at the 2006 College of Engineering Commencement Ceremony. Both Usoh and Iwuke graduated Summa Cum Laude from the college. Pippin recruited the two students during their junior year in high school five years ago.

Calendar

2006

Fall Break	Oct. 12-13
Engineers Day	Oct. 24
Thanksgiving	Nov. 23-24
Classes End	Dec. 5
Fall Commencement	Dec. 17

2007

Classes Begin	Jan. 10
King Holiday	Jan. 15
Spring Break	Mar. 12-16
Spring Recess Day	Apr. 6
Classes End	Apr. 27
Spring Commencement	May 11

Contact Information

Senior Administration

Dr. Way Kuo, Dean of Engineering and University Distinguished Professor

Dr. Alberto Garcia, Associate Dean for Academic Affairs

Dr. Masood Parang, Associate Dean for Student Affairs

Dr. Wayne T. Davis, Associate Dean for Research & Technology

Administration & Programs

Communications	974-0533
Dean's Office	974-5321
Development	974-2779
Engineering Academic Affairs	974-6092
Engineering Diversity Programs	974-1956
Engineering Fundamentals	974-9810
Engineering Research	974-8360
Engineering Student Affairs	974-2454
Finance & Admin. Affairs	974-5279
Office of Professional Practice	974-5323

Departments

Chemical	974-2421
Civil & Environmental	974-2503
Electrical & Computer	974-3461
Industrial & Information	974-3333
Materials Science	974-5336
Mechanical, Aerospace & Biomedical	974-5117
Nuclear	974-2525

Research Centers

Homeland Security	974-3339
Materials Processing	974-0816
Maintenance & Reliability	974-9625
Scintillation Materials	974-0267
Transportation Research	974-5255

Nuclear Engineering Poised to Celebrate 50th Anniversary

The University of Tennessee Nuclear Engineering Department, founded in 1957, will celebrate its 50th anniversary Saturday, March 3, 2007, at the new Knoxville Convention Center. Dr. Tony Buhl, a three-time graduate of the department is chairing the celebration, which will include both alumni and friends of the department.

Current plans for the event include:

6:00–7:00 pm: Reception with cash bar and slideshow in the background

7:00–8:00 pm: Banquet

8:00–9:00 pm: Program

"I am excited about the celebration," said Dr. Lee Dodds, NE department head. "We have a wonderful heritage, and it will all come together with the 50th anniversary celebration."

The department has had three department heads during the past 50 years: Pete Pasqua, founder of the department and head from 1957-1988; Tom Kerlin, head from 1988 to 1996; and Lee Dodds, the current head of the department.

"This event is a great opportunity for the many UT nuclear engineering alumni of the past 50 years to come together to renew friendships and celebrate the past," said Bert Ackermann, another three-time graduate of the department and a member of the College of Engineering Board of Advisors, as well as Chair of the Nuclear Engineering Department Board of Advisors.

A postcard reminder of the celebration will be mailed soon to all nuclear engineering alumni and friends of the department, and a web site with continually updated information is available at http://www.engr.utk.edu/nuclear/anniversary.html.

If you are an alumnus or supporter of the college, please send your e-mail address to the department (utne@utk.edu) so late occurring information about the celebration can be provided quickly to attendees. Please put "Anniversary Celebration" in the subject line.

For out-of-town attendees, rooms have been blocked for March 2 and 3 at two nearby hotels: The Cumberland House Hotel, which is adjacent to the Knoxville Convention Center, http://www.cumberlandhousehotel.com, and The Hampton Inn Knoxville-West at Cedar Bluff (Exit 378 of I-40/75), which is about 8 miles from the Convention Center (phone: 865-693-1101).

"This is a good time to celebrate the achievements of the past as well as the promising future ahead of the UT Department of Nuclear Engineering," Buhl said. "I hope all of our alumni and friends will join us for this exciting event."

–Story by Kim Cowart

TENNESSEE engineer

The University of Tennessee
College of Engineering
207 Perkins Hall
Knoxville, TN 37996-2012

Non-Profit Org.
US POSTAGE
PAID
Permit No. 481
Knoxville, TN